Example 6

Spontaneous Liposomes with Active Compounds for Topical Anesthesia.

Ingredient	Conc.
Tetracaine	2 g
PEG-12 GDO	20 g
Uniphen-23 ®	1.5 g
Water	76.5 g

Tetracaine, PEG-12 Glyceryl Dioleate, and Uniphen-23® were mixed together and heated to 40° C. while stirring. Water was heated to 40 degrees C. and added to the tetracaine solution while stirring gently. Mixture was cooled to room temperature. Examination by electron microscope showed LUV's and MLV's.

Example 7

Spontaneous Liposomes for Intravenous and Topical Formulations

Tretinoin (all-trans retinoic acid), 6 mg, was dissolved in 500 ul of PEG-12 Glyceryl Dioleate. Dissolution was complete. Distilled water, 4.5 ml, was added to the mixture and gently mixed. This yielded a concentration of 1 mg/ml. Examination by optical microscope showed multilamellar liposomes in the size range of 100 nm to 200 nm. This solution can easily be incorporated into a cream, gel or lotion dosage form.

While embodiments and applications of this invention have been shown and described, it would be apparent to those skilled in the art having the benefit of this disclosure that many more modifications than mentioned above are possible without departing from the inventive concepts herein. The invention, therefore, is not to be restricted except in the spirit of the appended claims.

What is claimed is:

1. A method of spontaneously preparing liposomes, the method consisting essentially of:

providing an aqueous solution;

providing one or more diacylglycerol-PEG lipids where the lipid or lipids have a P_a between about 0.84 and 0.88 and a P_v between about 0.88 and 0.93 and where P_a is the packing parameter with respect to surface and P_v is the packing parameter with respect to volume; and

combining the lipid or lipids and the aqueous solution at a temperature above the melting point of the lipid or lipids.

2. The method of claim **1**, where the PEG chain of the lipid or lipids has a molecular weight between about 300 Daltons and 5000 Daltons.

3. The method of claim **1**, where the diacylglycerol-PEG lipid comprises dioleolylglycerol-PEG-12.

4. The method of claim **1**, further comprising:

providing an active compound; and

combining the active compound with the lipid or lipids and the aqueous solution.

5. The method of claim **4**, where the active compound is selected from the group consisting of proteins, peptides, nucleic acids, agents for treating neoplasms, agents for treating inflammation, agents for treating infections, agents for treating gasterointestinal diseases, agents for treating immunological diseases, agents for treating skin diseases, agents for treating eye diseases, agents used in diagnosing disease, nutrients, agents for treating blood diseases, agents for treating metabolic diseases, agents for treating cardiovascular disease, agents for treating renal diseases, agents for treating genitourinary diseases, agents for treating respiratory diseases, and agents for treating central nervous system diseases.

6. A method of intravenously administering a therapeutic compound, the method consisting essentially of:

providing one or more diacylglycerol-PEG lipids where the lipid or lipids have a P_a between about 0.84 and 0.88 and a P_v between about 0.88 and 0.93 and where P_a is the packing parameter with respect to surface and P_v is the packing parameter with respect to volume;

providing the therapeutic compound;

providing an aqueous solution;

combining the lipid or lipids, compound and solution at a temperature above the melting point of the lipid or lipids to spontaneously form a liposome suspension; and

administering the liposome suspension intravenously.

7. The method of claim **6**, where the PEG chain of the lipid or lipids has a molecular weight between about 300 Daltons and 5000 Daltons.

8. The method of claim **6**, where the diacylglycerol-PEG lipid comprises dioleolylglycerol-PEG-12.

9. The method of claim **6**, where the therapeutic compound is selected from the group consisting of proteins, peptides, nucleic acids, agents for treating neoplasms, agents for treating inflammation, agents for treating infections, agents for treating gasterointestinal diseases, agents for treating immunological diseases, agents for treating skin diseases, agents for treating eye diseases, agents used in diagnosing disease, nutrients, agents for treating blood diseases, agents for treating metabolic diseases, agents for treating cardiovascular disease, agents for treating renal diseases, agents for treating genitourinary diseases, agents for treating respiratory diseases, and agents for treating central nervous system diseases.

10. A method of solubilizing an active compound, the method comprising:

providing one or more diacylglycerol-PEG lipids where the lipid or lipids have a P_a between about 0.84 and 0.88 and a P_v between about 0.88 and 0.93 where P_a is the packing parameter with respect to surface and P_v is the packing parameter with respect to volume;

providing the active compound;

providing an aqueous solution; and

combining the active compound, the lipid or lipids and the aqueous solution to spontaneously form a liposome suspension, where said combining occurs at a temperature above the melting point of the lipid composition.

11. The method of claim **10**, where said providing one or more diacylglycerol-PEG lipids includes providing the lipid or lipids in a sealed glass container containing an inert gas.

12. The method of claim **10**, where the PEG chain of the lipid or lipids has a molecular weight between about 300 Daltons and 5000 Daltons.

13. The method of claim **10**, where the diacylglycerol-PEG lipid comprises dioleolylglycerol-PEG-12.

14. The method of claim **10**, where the active compound is selected from the group consisting of proteins, peptides, nucleic acids, agents for treating neoplasms, agents for treating inflammation, agents for treating infections, agents for treating gasterointestinal diseases, agents for treating immunological diseases, agents for treating skin diseases, agents for treating eye diseases, agents used in diagnosing disease, nutrients agents for treating blood diseases, agents for treating metabolic diseases, agents for treating cardio-